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B) Please insert the following new claims:

23
--28. (New) The system of claim 1, wherein the polishing fluid flowing from first nozzle and the second nozzle has the same concentration.

29. (New) The system of claim 23, wherein the polishing fluid flowing onto the pad at a first location and the polishing fluid flowing onto the pad at a second location has the same concentration.--

REMARKS

This response is intended as a full and complete response to the Office Action dated July 5, 2002. In view of the following discussion, the Applicants believe that all claims are in allowable form.

CLAIM REJECTIONS

A. 35 U.S.C. §112 Claims 3 and 12

Claims 3 and 12 stand rejected under 35 U.S.C. § 112, second paragraph. In response, the Applicants have amended claims 3 and 12 as suggested by the Examiner. Specifically, claim 3 has been amended to insert the term "flow" to clearly distinguish the first flow controller from the second flow controller. Claim 12 has been amended to replace the term "the center" with "a center" to provide proper antecedent basis for that term. The Applicants submit that these claims are now in proper form and respectfully request the rejection be withdrawn.

B. 35 U.S.C. §102 Claims 1-9 and 15-25

Claims 1-9 and 15-25 stand rejected as being unpatentable over United States Patent No. 5,679,063, issued October 21, 1997 to Kimura et al. (hereinafter referred to as "Kimura"). The Applicants respectfully disagree.

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"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983). Here, Kimura fails to disclose each and every element of the claimed invention recited by independent claims 1, 16, 19 and 23.

Claim 1 recites a system for delivering a polishing fluid to a chemical mechanical polishing surface that includes an arm having a delivery portion disposed at least partially over the polishing surface. A first nozzle and at least a second nozzle are disposed on the delivery portion of the arm. The first nozzle is adapted to flow the polishing fluid at a first rate. The at least second nozzle is adapted to flow the polishing fluid at a second rate that is different than the first rate. Kimura does not teach or suggest an arm having a first nozzle and at least a second nozzle that are adapted to flow polishing fluid at different rates. As such, Kimura does not disclose each and every element recited by independent claim 1 and thus, cannot anticipate claim 1 and those claims depending therefrom.

Claim 16 recites a system for delivering a polishing fluid to a chemical mechanical polishing surface that includes an arm having a delivery portion disposed at least partially over the polishing surface. A first means and a second means are provided for providing polishing fluid to the polishing surface respectively at a first rate and a second a second rate, wherein the second rate is different than the first rate. Kimura does not teach or suggest an arm, a first means for providing polishing fluid and a second means for providing polishing fluid, wherein the second rate is different than the first rate. As such, Kimura does not disclose each and every element recited by independent claim 16 and thus, cannot anticipate claim 16 and those claims depending therefrom.

Claim 19 recites a system for delivering a polishing fluid to a chemical mechanical polishing surface that includes a platen supporting the polishing surface, a polishing head disposed over the platen an arm having a delivery portion disposed at least partially over the polishing surface. A first nozzle and at least a second nozzle

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are disposed on the delivery portion of the arm. The first nozzle is adapted to flow the polishing fluid at a first rate. The at least second nozzle is adapted to flow the polishing fluid at a second rate that is different than the first rate. Kimura does not teach or suggest an arm having a first nozzle and at least a second nozzle that are adapted to flow polishing fluid at different rates. As such, Kimura does not disclose each and every element recited by independent claim 19 and thus, cannot anticipate claim 19 and those claims depending therefrom.

Claim 23 recites a method for supplying a polishing fluid to a chemical mechanical polishing surface that includes the steps of flowing the polishing fluid onto the pad at a first location at a first rate, and flowing the polishing fluid on the pad at a second location at a second rate that is different than the first rate. Kimura does not teach or suggest flowing polishing fluid onto a pad at a first location at a first rate and polishing fluid onto a pad at a first location at a first rate that is different from the first rate. As such, Kimura does not disclose each and every element recited by independent claim 23 and thus, cannot anticipate claim 23 and those claims depending therefrom.

In contrast, Kimura teaches a polishing slurry delivery arm having a plurality of nozzles spaced-apart along the arm that deliver polishing solution to a polishing surface. Kimura teaches using the polishing slurry delivery arm to control the concentration of polishing solution across the width of the polishing pad. In one embodiment, a different concentration of polishing solution is flowed from each nozzle. In another embodiment, polishing solution of the same concentration is flowed from each nozzle but is diluted on the polishing surface by different amounts of water flowing from a second plurality of nozzles disposed on an adjacent arm. The volume of water flowing from each of the second plurality of nozzles is adjusted to locally dilute the concentration of the polishing solution on the pad. The mixture of polishing solution and water on the polishing surface provides a control concentration profile of polishing solution across the width of the polishing surface. Thus, Kimura teaches control of polishing solution concentrations applied across a polishing pad, which is not the same as flowing polishing fluid onto a pad at a first location at a first

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rate and polishing fluid onto a pad at a first location at a first rate that is different from the first rate.

The Examiner has asserted that each of the water supply nozzles 15A, 15B...15G having a needle valve meets the limitations of a first nozzle adapted to flow the polishing fluid at a first rate, and at least second nozzle adapted to flow the polishing fluid at a second rate that is different than the first rate. The Applicants respectfully disagree.

Claims 1-9 and 15-25 recite structure and methods for controlling the distribution of polishing fluid across a polishing surface by having different flow rates to the pad from a first and at least a second nozzle. In contrast, Kimura provides an apparatus to control the concentration of polishing fluid across a polishing surface. Controlling rates or amounts of polishing fluid delivered to a polishing surface is not the equivalent of controlling the concentration of polishing fluid across the polishing surface.

In one embodiment, Kimura teaches the water supply nozzles 15A, 15B...15G that flow water to mix with polishing solution supplied by (polishing) solution supply nozzles 14A, 14B...14G. The water supply nozzles 15A, 15B...15G are equipped with needle valves to control the rate of water flow therefrom. However, Kimura does not teach or suggest that any of the solution supply nozzles 14A, 14B...14G are equipped with needle valves or other independent flow control devices that would enable the solution supply nozzles 14A, 14B...14G to be adapted to flow polishing fluid to a pad at different rates as recited by claims 1, 16, 19 and 23. As such, Kimura does not disclose each and every element recited by independent claims 1, 16, 19 and 23 and thus, cannot anticipate claims 1, 16, 19 and 23 and those claims depending therefrom.

Thus, the Applicants submit that independent claims 1, 16, 19 and 23, and those claims depending therefrom, are patentable over Kimura. Accordingly, the Applicants respectfully request these rejections be withdrawn.

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C. 35 U.S.C. §103 Claims 10 and 11

Claims 10 and 11 stand rejected as being unpatentable over Kimura in view of the Applicants' specification. The Applicants respectfully disagree.

The burden for establishing a prima facie case of obviousness falls on the Examiner. See, MPEP § 2142. A basic requirement of establishing a prima facie case of obviousness is that the combination of prior art references must teach or suggest all the claim limitations and that there must be a motivation to combine the references. See, MPEP § 2143.

The Applicants assert that the Examiner has failed to establish a prima facie case because the Examiner has not shown that Kimura teaches or suggests all of the limitations of claim 1, from which claims 10 and 11 depend. Thus, the issue of whether the Applicants' specification teaches specific types of polishing material used is moot. Therefore, the Applicants submit that claims 10 and 11 are patentable over Kimura in view of the Applicants' specification. Accordingly, the Applicants respectfully request these rejections be withdrawn.

D. 35 U.S.C. §103 Claim 12-14

Claims 12-14 stand rejected as being unpatentable over Kimura. The Applicants respectfully disagree.

The burden for establishing a prima facie case of obviousness falls on the Examiner. See, MPEP § 2142. A basic requirement of establishing a prima facie case of obviousness is that the combination of prior art references must teach or suggest all the claim limitations and that there must be a motivation to combine the references. See, MPEP § 2143.

As discussed above, Kimura does not teach or suggest all the limitations of independent claim 1. Thus, Applicants assert that the Examiner has failed to establish a prima facie case because the Examiner has not shown that Kimura teaches or suggests all of the limitations of claim 1, from which claims 12-14 depend.

Therefore, the Applicants submit that claims 12-14, are patentable over Kimura. Accordingly, the Applicants respectfully request these rejections be withdrawn.

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E 35 U.S.C. §103 Claims 26 and 27

The Examiner has rejected claims 26 and 27 as being unpatentable over Kimura in view of United States Patent No. 5,433,650, issued July 18, 1995 to Winebarger (hereinafter referred to as "Winebarger"). The Applicants respectfully disagree.

As discussed above, Kimura does not teach or suggest all the limitations of independent claim 23, from which claims 26 and 27 depend. Winebarger teaches a method for monitoring and adjusting polishing rate using a block of optical quarts. Winebarger does not teach or suggest flowing polishing fluid onto a pad at a first location at a first rate and polishing fluid onto a pad at a first location at a first rate that is different from the first rate. Therefore, the combination of Kimura in view of Winebarger also does not teach or suggest flowing polishing fluid onto a pad at a first location at a first rate and polishing fluid onto a pad at a first location at a first rate that is different from the first rate.

Therefore, Kimura in view of Winebarger does not disclose each and every element recited by independent claim 23 and thus, cannot anticipate claims 26 and 27 that depend therefrom. Thus, Applicants assert that the Examiner has failed to establish a prima facie case of obviousness. Therefore, the Applicants submit that claims 26 and 27 are patentable over Kimura in view of Winebarger. Accordingly, the Applicants respectfully request these rejections be withdrawn.

NEW CLAIMS 28-29

New claims 28-29 have been added to more clearly recite aspects of the invention. The Applicant believes that no new matter has been added, and accordingly, request allowance of these claims.

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CONCLUSION

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited.

If, however, the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Mr. Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Sept 17, 2002



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APPENDIX 1

MARK-UP OF AMENDED CLAIMS

3. (Amended) The system of claim 2 further comprising a second flow control device coupled to the second nozzle.
12. (Amended) The system of claim 1, wherein the first nozzle is disposed radially inward of the second nozzle relative to [the] a center of rotation of the polishing pad, and wherein the first flow is at least 1.15 time greater than the second flow.
28. (New) The system of claim 1, wherein the polishing fluid flowing from first nozzle and the second nozzle has the same concentration.
29. (New) The system of claim 23, wherein the polishing fluid flowing onto the pad at a first location and the polishing fluid flowing onto the pad at a second location has the same concentration.